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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,127	12/18/2001	Louis Slaughter		5949
7590	09/29/2004		EXAMINER	
Ross Patent Law Office			PEREZ GUTIERREZ, RAFAEL	
P.O. Box 2138				
Del Mar, CA 92014			ART UNIT	PAPER NUMBER
			2686	
DATE MAILED: 09/29/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/025,127	Slaughter et al.	
	Examiner	Art Unit	
	Rafael Perez-Gutierrez	2686	

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 December 2001.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7 and 11-25 is/are rejected.
- 7) Claim(s) 8-10 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 July 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

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DETAILED ACTION

Priority

1. Applicant's claim for domestic priority under 35 U.S.C. 120 is acknowledged.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because, for inventor Kenneth Y. Tang, it lacks of a date of execution.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference numbers not mentioned in the description:

- a) On **figure 2**, reference number **9R** is not mentioned in the description; and
- b) On **figure 2**, reference number **810** is not mentioned in the description.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference number “**256**” has been used to designate both (**TDM, ATM, IP**) and **ETHERNET**.

To correct this informality, the Examiner suggests the Applicant to delete “**256**” after

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(TDM, ATM, IP).

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office Action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, the Applicant will be notified and informed of any required corrective action in the next Office Action. If a response to the present Office Action fails to include proper drawing corrections, corrected drawings or arguments therefor, the response can be held **NON-RESPONSIVE** and/or the application could be **ABANDONED** since the objections/corrections to the drawings are no longer held in abeyance.

Specification

6. The disclosure is objected to because of the following informality: In order to provide the

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most current priority information, the Examiner suggests the Applicant to replace the first paragraph on page 1 with the following paragraph:

--This application is a continuation-in-part application of Application Serial No. 09/847,629 filed May 2, 2001, now U.S. Patent No. 6,556,836 B2; Application Serial No. 09/872,542 filed June 2, 2001, now abandoned; Application Serial No. 09/872,621 filed June 2, 2001, now abandoned; Application Serial No. 09/882,482 filed June 14, 2001, now U.S. Patent No. 6,665,564 B2; Application Serial No. 09/952,591, filed September 14, 2001, now U.S. Patent No. 6,714,800 B2; Application Serial No. 09/965,875 filed September 28, 2001; Application Serial No. 10/046,348 filed October 25, 2001; Application Serial No. 10/001,617 filed October 30, 2001; Application Serial No. 09/992,251 filed November 13, 2001, now abandoned; and Application Serial No. 10/000,182 filed December 1, 2001, all of which are incorporated herein by reference.

The present invention relates to communication systems and specifically to fixed wireless communication systems.--

Appropriate correction is required.

Claim Objections

7. **Claims 1, 3, 8, 13, 15-17, and 25** are objected to because of the following informalities:
 - a) On **lines 4 and 9** of **claim 1**, delete “information” after “receiving”;
 - b) On **lines 5 and 10** of **claim 1**, replace “second” with --second,-- after “per”;
 - c) On **line 10** of **claim 1**, replace “first” with --second-- after “said”;

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- d) On **line 12 of claim 1**, replace “less” with --less,--;
- e) On **line 17 of claim 1**, replace “volume fiber-optics” with --speed fiber-optic-- in order to provide proper antecedent basis;
- f) On **line 17 of claim 1**, replace “transmission” with --transceiver-- in order to provide proper antecedent basis;
- g) On **line 1 of claim 3**, replace “said first and second transmission system each” with --each of said first and second transceiver systems--;
- h) On **line 2 of claim 3**, delete “a” after “of”;
- i) On **line 3 of claim 3**, delete “to” after “transmitting”;
- j) On **line 2 of claim 8**, replace “back-up” with --backup-- before “transceiver”;
- k) On **line 3 of claim 8**, replace “configured” with --and configured to-- before “continue”;
- l) On **line 1 of claims 13 and 15-17**, replace “Claim1” with --Claim 1--;
- m) On **line 1 of claim 17**, replace “are” with --is-- after “transceiver”; and
- n) On **line 3 of claim 25**, replace “beam” with --beams-- before “having”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the Applicant regards as his invention.

Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being

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indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Both, claims 11 and 12, depend from **claim 10** and they recite, respectively, that the frequency range is 5.9 to 6.9 GHz and 13 to 23 GHz. These frequency ranges render the claims indefinite since claim 10 already recites that the frequency range is 10.7 to 11.7 GHz. It appears that claims 11 and 12 should depend from **claim 9**. Therefore, appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

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U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. **Claims 1-7 and 13-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster, Jr. et al. (U.S. Patent # 6,016,313) in view of Zendle (U.S. Patent # 6,757,268 B1).**

Consider **claims 1-3 and 25**, Foster, Jr. et al. show and disclose a communication system including at least one millimeter wave wireless link (figure 1 and column 5 lines 31-35) comprising:

a node 150, 151, or 152 (first millimeter wave transceiver system) (figures 1 and 4) located at a first site 110, 120, or 130, respectively, capable of transmitting to a second site 110, 120, or 130 through atmosphere digital information at rates in excess of 30 million bits per second (e.g., 1 billion bits per second) and receiving information from said second site 110, 120, or 130 at rates in excess of 30 million bits per second (e.g., 1 billion bits per second) (column 2 lines 10-25 and 53-58), said node 150, 151, or 152 (first transceiver) comprising an antenna 420 (figure 4) producing a communication lobe (beam) having a beam width (half-power beam width) of approximately 2 degrees or less (e.g., 0.36 degrees) (column 15 lines 13-23); and

a node 150, 151, or 152 (second millimeter wave transceiver system) (figures 1 and 4) located at a second site 110, 120, or 130, respectively, capable of receiving from said first site 110, 120, or 130 digital information at rates in excess of 30 million bits per second (e.g., 1 billion bits per second) and transmitting information at rates in excess of 30 million bits per second

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(e.g., 1 billion bits per second) (column 2 lines 10-25 and 53-58), said node 150, 151, or 152 (second transceiver) comprising an antenna 420 (figure 4) producing a communication lobe (beam) having a beam width (half-power beam width) of approximately 2 degrees or less (e.g., 0.36 degrees) (column 15 lines 13-23);

at least one local area network (LAN) (plural local communication networks) 110, 120 (figure 1 and column 4 lines 25-27); and

a broadband fibre-optic gateway 160 (high speed fiber-optic network) (figure 1 and column 4 lines 43-54),

wherein communication is provided between said at least one LAN 110, 120 and said broadband fibre-optic gateway 160 (high speed fiber-optic network) via said nodes 150, 151, or 152 (first and second transceiver systems) (figures 1 and 4 and column 4 lines 19-62).

It is considered that the transmission and reception at rates in excess of 30 million bits per second in Foster, Jr. et al. occurs under any weather condition.

However, Foster, Jr. et al. do not specifically disclose a SONET aggregation unit, wherein the communication is provided also via said unit.

In the same field of endeavor, Zendle clearly shows and discloses a SONET-based communication system that includes at least one millimeter wave wireless link and a SONET backbone network 702 (aggregation unit) (figure 7) providing communication between multiple hubs 704-1-704-n (local networks) (abstract, figure 7, column 4 line 55 - column 5 line 20, and column 7 lines 40-49).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the SONET backbone network taught by Zendle into the

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system taught by Foster, Jr. et al. for the purpose of providing high speed data communications between networks and increased capacity in the system.

Consider **claims 4-7, and as applied to claim 1 above**, Foster, Jr. et al., as modified by Zendle, also disclose that the system uses a carrier frequency in the millimeter wave-length frequency spectrum (i.e., extremely high frequency (EHF)) (column 2 lines 53-55, column 5 lines 18-22, and column 15 lines 15-23).

Therefore, it would have been clearly obvious to a person of ordinary skill in the art at the time the invention was made to slightly modify the system of Foster, Jr. et al., as modified by Zendle, to specifically operate the system at frequencies greater than 57 GHz, 90 GHz, or in the range of 92-95 GHz (e.g., transmit at 92.3-93.2 GHz, receive at 94.1-95.0 GHz) since these frequencies are extremely high and they fall in the millimeter wave-length frequency spectrum.

Consider **claims 13-16, and as applied to claim 1 above**, Foster, Jr. et al., as modified by Zendle, clearly disclose that the first site 110, 120, or 130, and the second site 110, 120, or 130 are separated by a significant physical distance (column 1 lines 12-16 and 61-64 and column 5 lines 31-35), consequently, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to slightly modify the system of Foster, Jr. et al., as modified by Zendle, to specifically operate the system between sites that are at least 1, 2, 7, or 10 miles apart.

Consider **claim 17, and as applied to claim 1 above**, although Foster, Jr. et al., as modified by Zendle, only disclose bit error ratios of 10^{-6} for purposes of modulation (column 19 lines 13-23), a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the combined teachings of Foster, Jr. et al. and Zendle to transmit and receive information at bit error ratios of less than 10^{-10} in order to ensure that the available

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spectrum is efficiently used.

Consider **claims 18-20, 23, and 24**, and as applied to claim 1 above, Foster, Jr. et al., as modified by Zendle, clearly disclose that the nodes 150, 151, and 152 are equipped with a parabolic dish antenna (e.g., prime focus or offset parabolic antenna) providing 42 dB of gain (column 15 lines 16-18). Although, Foster, Jr. et al. do not specifically disclose that the antenna provides a gain greater than 45 dB or 50 dB, a person of ordinary skill in the art at the time the invention was made would have clearly recognized that antennas providing such gain can be used in the combined system of Foster, Jr. et al. and Zendle without significantly altering the layout of the system.

Consider **claims 21 and 22**, and as applied to claim 20 above, Foster, Jr. et al., as modified by Zendle, clearly disclose the claimed invention except that the antenna 420 is a flat panel or a Cassegrainian antenna.

However, the Examiner takes Official Notice of the fact that it is notoriously well known in the art of antennas that flat panel antennas and Cassegrainian antennas are capable of providing a gain greater than 50 dB, therefore, a person of ordinary skill in the art at the time the invention was made would have been motivated, by cost or system considerations, to use either of these antennas in place of antenna 420.

Allowable Subject Matter

11. **Claims 8-10** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and

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any intervening claims as well as any corrections to the objections made above.

12. **Claims 11 and 12** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office Action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

13. Any response to this Office Action should be **faxed to (703) 872-9306 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Crystal Park II
2021 Crystal Drive
Arlington, VA 22202
Sixth Floor (Receptionist)

14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rafael Perez-Gutierrez whose telephone number is (703) 308-8996. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700 or call customer service at (703) 306-0377.



Rafael Perez-Gutierrez

R.P.G./rpg **RAFAEL PEREZ-GUTIERREZ**
PATENT EXAMINER

September 24, 2004